

ii.) laminating the first polyimide film onto at least one etched surface of the substrate via an intermediate ~~second~~ polymeric film; and wherein the resulting printed circuit board composite has a peel strength of at least 4 lbs./inch.

2. (Withdrawn and Previously Amended) The process of claim 1 wherein the first polyimide film is laminated directly onto at least one etched surface of the substrate.

3. (Withdrawn and Previously Amended) The process of claim 1 wherein the first polyimide film is laminated onto at least one etched surface of the substrate via an intermediate ~~second~~ polymeric film.

Claims 4-8 (Previously Canceled).

9. (Withdrawn) The process of claim 1 wherein the metal foil comprises a material selected from the group consisting of copper, zinc, brass, chrome, nickel, aluminum, stainless steel, iron, gold, silver, titanium and combinations and alloys thereof.

10. (Withdrawn) The process of claim 1 wherein the metal foil comprises copper.

11. (Withdrawn) The process of claim 1 wherein the first polyimide film has a thickness of about 3  $\mu\text{m}$  to about 50  $\mu\text{m}$ .

12. (Withdrawn) The process of claim 1 wherein the metal foil has a thickness of about 3  $\mu\text{m}$  to about 200  $\mu\text{m}$ .

13. (Withdrawn) The process of claim 1 wherein etching step (a) is conducted with an aqueous alkaline solution.

14. (Withdrawn) The process of claim 1 wherein etching step (a) is conducted with an aqueous solution comprising a Group I or Group II hydroxide.

15. (Withdrawn) The process of claim 1 wherein etching step (a) is conducted with an aqueous alkaline solution comprising NaOH or KOH.

16. (Withdrawn) The process of claim 1 wherein etching step (a) is conducted with a plasma etchant.

17. (Withdrawn) The process of claim 1 wherein etching step (a) is conducted with a plasma etchant comprising a mixture of oxygen (O<sub>2</sub>) and tetrafluoromethane.

18. (Withdrawn) The process of claim 17 wherein the plasma etchant comprises at least about 3% of tetrafluoromethane.

19. (Withdrawn) The process of claim 17 wherein the plasma etchant comprises greater than about 7% of tetrafluoromethane.

20. (Withdrawn) The process of claim 1 wherein etching step (a) is conducted such that at least about 0.45  $\mu\text{m}$  of the substrate surface is removed.

21. (Withdrawn) The process of claim 1 wherein laminating is conducted by autoclave lamination; vacuum hydraulic pressing; non-vacuum hydraulic pressing; hot roll lamination; or by heating the metal foil by an amount sufficient

to soften the ~~polymeric~~ polyimide film by flowing an electric current through the foil and attaching the ~~polymeric~~ polyimide film to the substrate.

22. (Withdrawn) The process of claim 1 wherein first and second surfaces of the substrate are etched.

23. (Withdrawn and Previously Amended) The process of claim 22 further comprising:

- i.) laminating an additional first polyimide film coated on a surface of an additional metal foil directly onto the second etched surface of the substrate, or
- ii.) laminating an additional first polyimide film coated on a surface of an additional metal foil onto the second etched surface of the substrate via an intermediate ~~second~~ polymeric film.

24. (Withdrawn and Previously Amended) The process of claim 23 wherein the additional first polyimide film is laminated directly onto the second etched surface of the substrate.

25. (Withdrawn and Previously Amended) The process of claim 23 wherein the additional first polyimide film is laminated onto the second etched surface of the substrate via an intermediate ~~second~~ polymeric film.

26. (Withdrawn) The process of claim 23 wherein laminating is conducted by autoclave lamination; vacuum hydraulic pressing; non-vacuum hydraulic pressing; hot roll lamination; or by heating the metal foil by an amount sufficient to soften the ~~polymeric~~ polyimide film by flowing an electric current through the foil and attaching the ~~polymeric~~ polyimide film to the substrate.

27. (Currently and Previously Amended) A printed circuit board composite comprising a polyimide substrate having a first etched surface, a first ~~polyamide~~ polyimide film ~~attached~~ laminated to the first etched surface of the substrate and a layer of a metal foil attached to an opposite side of the first polyimide film; and wherein the resulting printed circuit board composite has a peel strength of at least 4 lbs./inch.

28. (Previously Presented and Previously Amended) The printed circuit board composite of claim 27 wherein the substrate further comprises a second etched surface opposite the first etched surface, an additional first polyimide film ~~attached~~ laminated to the second etched surface and an additional layer of a metal foil attached to an opposite side of the additional first polyimide film.

Claims 29 and 30 (Previously Canceled).

31. (Original) The printed circuit board composite of claim 27 wherein the metal foil comprises a material selected from the group consisting of copper, zinc, brass, chrome, nickel, aluminum, stainless steel, iron, gold, silver, titanium and combinations and alloys thereof.

32. (Original) The printed circuit board composite of claim 27 wherein the metal foil comprises copper.

33. (Original) The printed circuit board composite of claim 27 wherein the first ~~polymeric~~ polyimide film has a thickness of from about 3  $\mu\text{m}$  to about 50  $\mu\text{m}$ .

34. (Original) The printed circuit board composite of claim 27 wherein the metal foil has a thickness of from about 3  $\mu\text{m}$  to about 200  $\mu\text{m}$ .

35. (Withdrawn and Previously Amended) A process for forming a printed circuit board comprising:

- a) etching at least one surface of a polyimide substrate;
  - b) coating a first polyimide film onto a surface of a metal foil;
  - c) laminating the first polyimide film onto the substrate by:
    - i.) laminating the first polyimide film directly onto at least one etched surface of the substrate, or
    - ii.) laminating the first polyimide film onto at least one etched surface of the substrate via an intermediate ~~second~~ polymeric film;
  - d) depositing a photoresist onto the metal foil;
  - e) imagewise exposing and developing the photoresist, thereby revealing underlying portions of the metal foil; and
  - f) removing the revealed underlying portions of the metal foil; and
- wherein the resulting printed circuit board has a peel strength of at least 4 lbs./inch.

36. (Withdrawn) The process of claim 35 further comprising roughening the surface of the metal foil opposite the ~~polymeric~~ polyimide film prior to step (d).

37. (Withdrawn) The process of claim 36 wherein the roughened surface of the metal foil has an average roughness value that ranges from about 1 to about 10 microns.

38. (Withdrawn) The process of claim 36 wherein the roughened surface of the metal foil comprises micro-nodules of a metal or metal alloy on or in the roughened surface.

39. (Withdrawn) The process of claim 36 wherein the roughened surface of the metal foil is roughened by micro-etching.

40. (Withdrawn) The process of claim 35 further comprising the step of removing any remaining photoresist after step (f).

41. (Withdrawn) The process of claim 35 wherein the revealed portions of the metal foil are removed by acid etching.

42. (Withdrawn) The process of claim 35 wherein the revealed portions of the metal foil are removed by alkaline etching to the substrate.

43. (Withdrawn and Previously Presented) The process of claim 1 wherein the polyimide film is applied to the metal foil by coating a solvent solution of the polyimide onto the foil and drying wherein the solution has a viscosity ranging from about 5,000 to about 35,000 centipoise.

44. (Previously Presented) The printed circuit board composite of claim 27 wherein the polyimide film has been applied to the metal foil by coating a solvent solution of the polyimide onto the foil and drying wherein the solution has a viscosity ranging from about 5,000 to about 35,000 centipoise.

45. (Withdrawn and Previously Presented) The process of claim 35 wherein the polyimide film is applied to the metal foil by coating a solvent solution of the polyimide onto the foil and drying wherein the solution has a viscosity ranging from about 5,000 to about 35,000 centipoise.